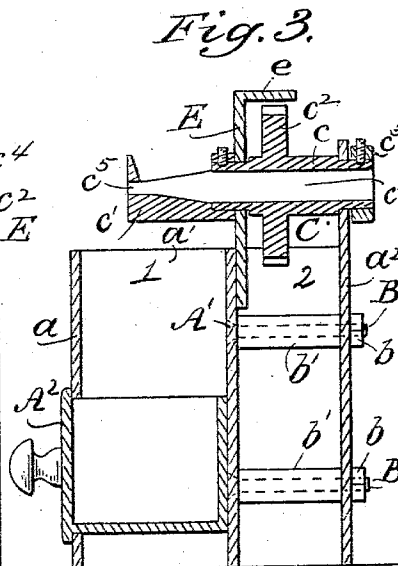
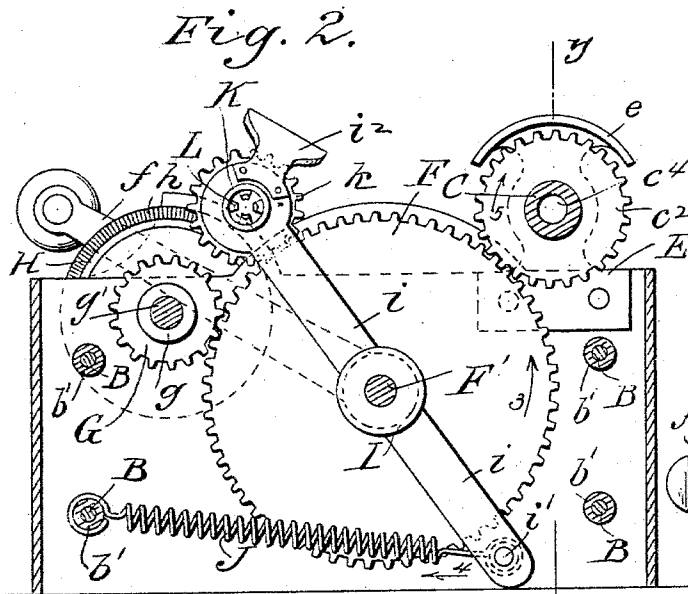
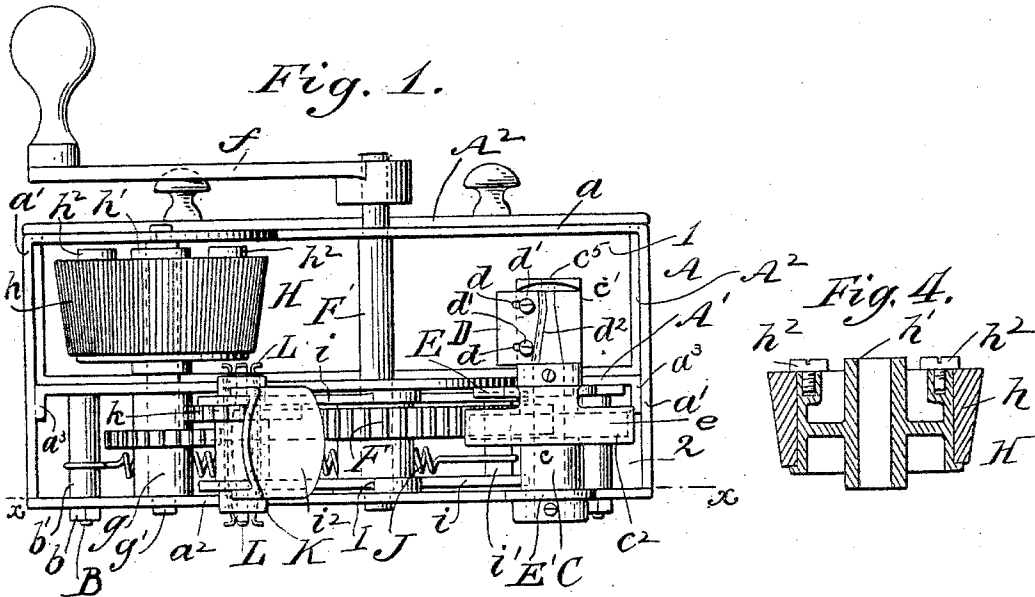


(No Model.)

W. H. WHITE.
PENCIL SHARPENER.

No. 569,698.

Patented Oct. 20, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM H. WHITE, OF NYACK, NEW YORK, ASSIGNOR OF ONE-HALF TO
EUGENE W. RUTHERFORD, OF BROOKLYN, NEW YORK.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 569,698, dated October 20, 1896.

Application filed April 21, 1896. Serial No. 588,442. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WHITE, a citizen of the United States, and a resident of Nyack, county of Rockland, and State of New York, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to an improved pencil-sharpener, and has for its object to provide a device of this character which is adapted to cut away the woodwork of a lead-pencil by means of a sharp revolving knife and to sharpen or point the lead portion thereof by the application of a revolving grinding-wheel, whereby the pencil is sharpened without waste of material.

The device comprises few and simple parts and it is inexpensive and durable.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of my improved pencil-sharpener. Fig. 2 is a longitudinal sectional elevation thereof on a line xx of Fig. 1. Fig. 3 is a vertical sectional elevation on a line yy of Fig. 2, and Fig. 4 is a cross-sectional elevation of the grinding-wheel forming part of the device.

In the practice of my invention I provide a casing A, which comprises a front wall a , end walls a' , and a rear wall a^2 , the front wall a and the side walls a' being preferably composed of a single piece of sheet metal.

Extended longitudinally through the casing A is a partition A', which has vertical flanges a^3 thereon for attachment to the end walls a' of the casing, the rear wall a^2 being attached by means of bolts B and nuts b , the said bolts being surrounded by collars b' , whereby a rigid and well-braced structure is provided, said structure comprising two compartments 1 and 2.

The operative parts of the device comprise, primarily, the revoluble hub C, which is constructed in two sections c and c' , the section c thereof having a pinion c^2 formed integrally

therewith, and the section c' having a cutting-knife D attached thereto, said knife being provided with slots d on the face thereof for the purpose of adjustment and being secured in place by screws d' , the beveled edge d^2 of said knife being so shaped as to cut away the woodwork of a pencil in conical shape, whereby the lead portion will not be mutilated or roughly cut away. The revoluble hub is mounted upon suitable bearings E and E', and has a collar c^3 thereon to prevent lateral motion.

The bearing E is provided with a rearwardly-extended guard e to prevent the hands of an operator from contacting with the pinion c^2 . The hub C is further provided with a cylindrical opening c^4 , which said opening is beveled at its forward portion and then extended into a contracted cylindrical portion c^5 , adapted to engage with the lead of a pencil being sharpened. The said hub and its pinion are driven by means of a toothed wheel F, which is adapted to be revolved in the direction of the arrow 3 through the medium of the crank f , these two said parts being mounted upon a shaft F', which is journaled through the longitudinal walls of the structure comprising the framework.

Gearing with the wheel F, at a point opposite to where the pinion c^2 gears, is a pinion G, which said pinion forms part of a hub g , which is attached to a shaft g' . This said shaft also has mounted thereon and securely attached thereto a grinding-wheel H, said wheel comprising a removable peripheral portion h and a hub h' , the grinding-ring h being detachable for the purpose of renewal when it is worn out, or grinding-rings may be provided having their conical edges of variable angles. Lateral motion of the ring h upon its hub h' is prevented by attaching screws h^2 to the forward surface of the hub, the heads of these screws being large enough to extend over upon the face of the grinding-ring h .

Loosely mounted upon the shaft F' is a fork I, which comprises two side arms i , a cross-bar i' , and a guard i^2 . Attached to the cross-bar i' is a spiral spring J. This said spring is secured at its opposite end to one of the cross braces or collars b' of the framework. The spring being normally contracted will

draw the lower portion of the fork in the direction of the arrow 4, whereby the upper ends of the fork will be normally maintained in the position illustrated in Fig. 2 of the drawings. These said upper ends are connected by the guard i^2 , which is used as a means for operating the fork, as will be hereinafter described. Journaled loosely within the said upper ends of the fork is a cylindrical hub K, which said hub has forming part thereof or securely attached thereto a pinion k , which pinion gears with the driving-wheel F and is adapted to be revolved thereby. Extending through and securely attached to the hub K is a spring-chuck L, which chuck is adapted to clamp and retain a lead-pencil.

In the operation of the device an operator will turn the crank f in the direction of the arrow 3, whereby the pinion c^2 and its connected parts will be driven in the direction of the arrow 5. The lead-pencil will then be forced through the opening of the hub C until its end contacts with the revolving knife D, the pencil being held tightly and pushed forwardly until its lead portion is extended through the small opening c^5 and its wood portion is cut away into conical shape. The pencil is then removed and forced through the chuck L, which tightly clamps it. Rotary motion again being applied to the main driving-wheel will simultaneously drive the pinions G and k , whereby the grinding-wheel H will be caused to revolve in the same direction as the pinion k and its attachments, consisting of the hub K and chuck L.

To bring the pencil into engagement with the grinding-surface of the wheel H, an operator will simply press upon the guard i^2 and continue to revolve the machine until the pencil is sharpened, which operation can be performed without wasting any of the material unnecessarily.

As a means for collecting the pencil-dust and wood-shavings which will accumulate during the operation of sharpening a pencil, I provide through the front wall a of the framework A a removable drawer A^2 , which can be emptied at the will of an operator.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pencil-sharpener comprising a revoluble hub which has a cylindrical opening there-through for engagement with the end of a pencil, said opening being conical in longitudinal section at its forward part and having

a contracted cylindrical outlet leading from the apex of said conical portion, the forward end of the said hub being cut away upon an angle coincident with the angle of its conical opening and having a knife mounted thereon, and a revoluble chuck, and a conical grinding-wheel, and a framework upon which the said parts are mounted and means for simultaneously rotating them, and means for keeping the said chuck out of normal alinement with the edge of the said grinding-wheel, substantially as shown and described.

2. In a pencil-sharpener, the framework having a drawer therein and the revoluble driving-wheel, and the pinions engaging with said driving-wheel; combined with the revoluble hollow hub having a cutting-knife secured in a recess of its forward end, and the fork which is pivotally mounted upon the shaft of the main driving-wheel which fork is connected to a spiral spring at its lower end and to a revoluble cylindrical hub at its upper end, said hub containing a spring-clutch adapted to hold a pencil; and the revoluble grinding-wheel having a removable conical grinding-ring thereon, substantially as shown and described.

3. The combination of the revoluble hub having a pinion thereon and a cylindrical opening therethrough which is cone-shaped at its forward portion and which terminates in a contracted cylindrical outlet and which has a knife mounted in a recess thereof, which recess is cut away upon an angle coincident with the angle of the said conical portion, and the driving-wheel having a fork loosely mounted upon the shaft thereof, which fork has a revoluble hub and pinion mounted upon its upper end and a normally-contracted spring attached to its lower end, said pinion meshing with the said driving-wheel and said hub having a spring-clutch therein for engagement with a pencil; with a revoluble grinding-wheel comprising a hub and a removable grinding-ring, the said parts all being mounted upon a framework, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 20th day of April, 1896.

WILLIAM H. WHITE.

Witnesses:

W. W. HILL,
O. C. WINGE.